

**Alzheimer's Disease: From Molecular Biology to Therapy.** Robert Becker and Ezio Giacobini, eds. Birkhauser, Postfach 133, CH-4010, Basel, Switzerland. 1996. 613pp.

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One of the areas of interdisciplinary research that has yet to make a significant advance is the 'Storage and retrieval of information in the brain' or 'mechanism of memory' at the molecular level. The dementias that represent a group of disorders involving loss of memory and other functional aspects of the brain are pertinent in this context. The Alzheimer's dementia is claimed to affect 10 to 15% of human population above the age of 70 in Western countries. Reports on this disease in India are scanty primarily because of the difficulties in the accurate diagnosis and differentiation of this disease from other types of dementia. Increase in the aged population all over the world because of improvements in medical care makes it an urgent need to tackle this disease. The hall-marks of Alzheimer disease are the deposition of a peptide (amyloid peptide of 40 to 42 amino acids) in plaques found in the brain and an abnormal increase in neurofibrillary tangles made of the microtubule protein tau. A marked impairment of cholinergic transmission was noticed in this disease in the beginning stages of research in this area and the approved drugs for amelioration of disease are cholinesterase inhibitors like tacrine which presumably protect the neurotransmitter acetylcholine from destruction. Of late, works from several laboratories have implicated the involvement of several factors such as monoaminergic transmitters, apolipoproteinE, oxidative damage, metal toxicity and presenilin in the pathogenesis of the disease.

This book which is the third in the series of 'Advances in Alzheimer Disease Therapy' provides a number of short articles on current advances in basic and clinical sciences that are relevant in understanding the etiology, pathogenesis, diagnosis, treatment and socio-economic aspects of Alzheimer disease. None of the articles are exhaustive or go in depth into the topic discussed. Most articles give a piece of information that may provide avenues for future thinking or work on the specific topic discussed. Many therapeutic strategies are described; however the use of protease inhibitors to prevent formation

of the amyloid beta peptide from its precursor and the use of compounds that would prevent the aggregation and fibril formation of the peptide which are of current interest have not been addressed adequately in the articles. On the whole, this book will provide useful information to those who are already familiar with the varied aspects of Alzheimer's dementia. The last article on the Ronald and Nancy Reagan Research Institute of the Alzheimer's Association emphasizes the gravity of the disease and the need for integrated effort aimed at treatment of the disease.

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**Ethical Values for Excellence in Education and Science.** J. N. Kapur. Vishwa Prakashan, 4835/24, Ansari Road, Daryaganj, New Delhi 110 002. 1996. Price: Rs 250. 157pp.

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Science being the knowledge in pursuit of truth, its very existence demands the premise that knowledge is good and the ethics of responsibility makes scientists individually responsible for evaluating the knowledge that they acquire for transmitting it as may be right and for its ultimate realization as good. Science, thus, demands that ethics be anchored in the very case of reality. Indeed, ethical values must be the starting point and end of all sciences. 'The question of values is the question of the compass according to which we should orient ourselves when we seek our way through life' so reflected Werner Heisenberg.

Albert Einstein spoke on the subject in a very telling way as: 'Our time is distinguished by wonderful achievements in the field of scientific understanding and the technical application of these insights. Who would not be cheered by this? But let us not forget that knowledge and skills alone cannot lead humanity to a happy and dignified life. Humanity has every reason to place the proclaimers of high moral standards and values above the discoverers of objective truths. He must acquire a vivid sense of the beautiful and what is morally good. Otherwise, he with his specialized knowledge will more closely

resemble a well-trained dog than a harmoniously developed person.'

Science and society are clearly inseparable. And, so is the congruence amongst values, education and development through science. Education being the most effective institutional means to achieve societal needs and cultural ends by drawing out the best in man, it is the most potent force in inculcating values for propagation of moral and ethical practices. The task of educators is thus to impart a value-based scientific education that concern for mankind always forms the chief interest of all technical endeavours.

Study of ethics is essentially the knowledge to differentiate between the good and bad, right and wrong. It is concerned with discovering the principles that should govern human conduct and with the investigation of normative issues involving value judgements. In a way, ethics join people into societies and yet give them a sense of individuality. Just as fire is essential to produce the best of steel, so are ethics for nurturing the best education and science.

The role of ethics in creating excellence in education, science and society is indeed very fundamental. Its recognition has led to formal courses and degrees and research centres on the subject in several academic institutions in USA and Europe. A new journal on Science and Accountability and a few books based on case studies have appeared. Some Schools of Management and Industrial Engineering have adopted Ethics as a fullfledged subject.

As far as the Indian scenario is concerned, the subject of Science and Accountability has been discussed as a focal theme in the 1994 Indian Science Congress Session. A Society for Scientific Values has been functioning for over a decade: The society held a symposium on Scientific Values and Excellence in Science and published its proceedings. The author of the book under review is a distinguished mathematician, a great teacher and a prolific researcher of renown who has taken keen interest in ethical, moral and scientific values in Indian education, science and society. He has lectured extensively on the subject. Kapur has taken a lot of pains to compile the best of relevant material available in India, including his own lectures and views. The main thesis of the book is that ethical and moral values in Indian society have eroded and continue to do so very rapidly. This

erosion has prevented us from achieving levels of excellence in science and education which otherwise we are capable of achieving in all walks of life. The author has compiled available data and dwelt on his personal experiences to support his thesis. Further, he has given suggestions to combat the deadly disease (as he calls it) of Erosion of Ethical and Moral Values (EEMV).

The book consists of three parts. Part A deals with ethical and moral values (EMV) for excellence in science. Part B discusses EMV for excellence in education while part C analyses the subject related to society. Despite the inevitable repetitions and disjointed compilations of various lectures and addresses, the book is well written and is indeed informative and thought-provoking. The contents provide a lot of food for thought for both teachers and the taught, for the researcher at any level, and for the managers of education, science and technology. In summary, the book is a good first attempt to focus the attention of patriotic citizens to a deadly disease which we must tackle before it assumes an epidemic proportion. And, it points out forcefully the need to make ethics as a fundamental subject for students at all levels. It is hoped that this book will inspire more critical discussion, practical initiatives and study materials.

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Neem. N. S. Randhawa and B. S. Parmar, eds. New Age International (P) Ltd. 4835/124, Ansari Road, Daryaganj, New Delhi 110 002. 1996. Price: Rs 500. 332pp.

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The multiple efficacy of neem derivatives has attracted the attention of scientists from diverse disciplines, in particular agriculture, public health and medicine. Universal interest is evinced in neem products and their active ingredients. Its utility in plant protection has aroused

interest in the fields of agronomy, soil science, entomology, nematology, pathology and chemistry. Viewed in this context, the book under review is a very relevant publication serving to integrate information in the different fields.

Beginning with the taxonomic and vegetative features, reproduction and embryology, wood characters and gum, the book seeks to explain gene resources and breeding potential of neem, in particular seed sources, genetic variation and seed viability storage. Genetic resources of neem and its wild related types are discussed with emphasis on species diversity as well as ethnobotanical aspects relating to local, native and traditional uses and beliefs. Silvicultural aspects including nursery techniques, stand formation and afforestation, growth stabilities, economics of neem plantations and management are highlighted, besides the importance of neem in various agroforestry systems, agrisilviculture, energy plantation and biomass productivity.

The diversity of insect pests of neem and the nature of damage, fungal and bacterial diseases are emphasized and since many pests suffer from natural epizootics, systematic research on insect pathogens hold great promise for IPM programmes. Stress has been made on botanical pest control, also an important component of IPM, involving neem products in pest management and compatibility of biochemicals with biocontrol agents. Chemical aspects of neem involving isoprenoids and non-isoprenoids and their biosynthesis are enumerated with emphasis on limonoids, azadirachtins and melacinins. Steam volatile components of neem seed/oil have also been indicated, besides methods of processing, standardization and product formulation.

An important aspect of neem studies pertains to its nitrification-inhibiting property as well as effects of its application on ammonia volatilization and on the efficacy of nitrogen utilization by crops. Results are also provided in the relative efficacy of urea and neem-cake coated urea in different crops, as well as comparative efficiency of meliacins and nitrapyrin as nitrification retarders in soil. Since neem

represents the leading edge of a new wave of botanical bioefficacious products, the need for a standardized evaluation procedure, particularly of the active ingredients in a neem product has been emphasized. In tune with this, different parts of the neem tree, its seed cake, different extracts, oil and gum have been evaluated for their bioactivity against plant parasitic nematodes. Bioactivity against insects, information on their antifeedant activity, insect growth regulating effects, toxicity, effect on fertility and reproduction, oviposition deterrent effect, and effect on natural enemies are adequately stressed. Naturally interest is centred on the mode of action of azadirachtin on these pests, notably physiological mechanisms including endocrines and chemosensory mechanisms.

Neem as an ancient veterinary medicine, livestock production and health and ancient human medicine are documented, besides pharmacological studies for therapeutic potentiality in malaria control. Review has been made of pharmacological studies for therapeutic potential relevant to a number of human diseases, along with commercialization of neem. Since it is a renewable resource of various useful products, opportunities for commercialization are great and useful information is provided relating to this aspect on pesticides and allied agrochemicals, medical application, toiletries and cosmetics, cattle and poultry feed and thermal efficiency of wood for fuel.

In view of the increased consciousness of the role of biopesticides in reducing pollution and their overall efficacy, this superplant neem, has increased potential for multisided utilization. This book is a very useful compendium of diversified information which will go a long way towards kindling further interest in the biological, biochemical and physiological aspects of neem.

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